Displays

MPD 1xAG Series

NEMA 4 Sealed Panel-Mount LCD Monitor; RoHS-Compliant

MPD 12AG: 12" Display

MPD 15AG: 15" Display

MPD 17AG: 17" Display

USER'S MANUAL

VER. 1.2 • MAR 2006

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Packing List

Before you begin installing your LCD, please make sure that the following items have been shipped:

- 1 x MPD 17AG/15AG/12AG series industrial LCD.
- 1 x MPD 1xAG series User Manual in PDF format.
- 1 x AC Power Cord (cable type determined by the shipped-to area).
- 1 x 46W AC power adapter (12V/3.8A)
- 1 x VAG cable (15-pin D-SUB male-to-male/180cm)
- 5 x round head screws
- 5 x flat head screws
- 5 x wire strain bands
- 1 x power cable for terminal block (an optional item for the “M” models).
- 1 x touch screen RS-232 cable/touch pen/driver CD-ROM (an optional item for the “TR” models)
- 1 x Installation, Utility, and Driver CD.

The quantities of these items are listed below:

AC Power Cable	1
VGA Cable	1
45W AC Power Adapter	1
Round Head Screw	5
Flat Head Screw	5
Wire Strain Band	5

Power Cable for Terminal Block	1	Optional
Touch Screen RS-232 Cable / Touch Pen / Driver CDROM	1	Optional

If any of these items are missing or damaged, contact CyberResearch, Inc.

Configuration Options

- Chassis coating/paint/color options
- Touch screen options
- RS-232 extension cable
- OSD extension wire cable
- Wall-mount bracket
- Replacement rubber gasket

Safety Precautions

1. Prior to installing, moving, and modifying the LCD panel, be sure that the unit's power is turned off and the power cord is disconnected.
2. Do not apply voltage levels that exceed the specified voltage range. Doing so will cause fire or an electrical shock.
3. Electric shock can occur if the panel is opened. Do not drop or insert any objects into the ventilation openings of the LCD.
4. Only qualified engineers from certified system integrators or VARs are allowed to make necessary functional modifications to the LCD, e.g., adding a touch screen.

5. For installations related to human safety, connect a separately installed mechanical switch instead of the LCD's power switch.
6. Designs with stand-alone and fault-tolerant hardware considerations should be implemented using the series models as a critical alarm or production line control.
7. If considerable amount of dust, water, or fluids entered the LCD, turn off the power supply immediately, unplug the power cord, and contact your vendor.
8. Explosions may occur with installations in environments where flammable gases are present.

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9. Special applications such as aviation/aerospace control, critical
10. Fault-tolerant and failsafe designs should be implemented with the use of the series models on transportation vehicles, ships, safety/security devices, or medical devices not related to life-support functionalities. Users/integrators should take the responsibility for implementations with adequate levels of reliability and safety.
11. Preventive designs should be implemented so as to avoid the communications faults between the LCD and the PC/workstation/terminals that controls it.

Precautions about Damages to the LCD

1. Do not drop the LCD against a hard surface. Doing so will damage the display.
2. Do not strike or exert excessive force onto the touch panel.
3. Touching the touch panel using a sharp object will damage the LCD panel.
4. Avoid environments exposed to direct sunlight, dust, or chemical vapors.
5. The LCD is passively cooled. In no circumstances should the LCD operate with the openings obstructed by foreign objects. The ambient temperature of the installation site should be observed and controlled to avoid overheating the LCD.
6. Condensation might form inside the LCD chassis if exposed to sudden changes in temperature.
7. Carefully route the power cord so that people cannot step on it. Do not place anything over the power cord.
8. If the equipment should be left unused for an extended period of time, disconnect it from the power source to avoid damage by transient over-voltage.
9. If any of the following situations arises, get the equipment checked by service personnel:

The power cord or plug is damaged.

- Liquid has penetrated into the equipment.
- The equipment has been exposed to moisture.
- The equipment does not work properly, or you cannot get it to work according to the user manual.
- The equipment has been dropped and damaged.
- The equipment shows obvious signs of breakage.

WARNING!

Any changes or modifications made to the equipment that are not expressly approved by the relevant standards authority could void your authority to operate the equipment.

Additional Information and Assistance

Maintain and Cleaning

You need to note the following precautions before you begin to clean the LCD.
When you clean any single part or component of the computer, please read and understand the details below fully.

1. Never spray or squirt liquids directly onto any computer component. If you need to clean the device, please rub it with a piece of dry and soft cloth or a slightly moistened cloth with the exterior casing.
2. The interior of the LCD does not require cleaning. Keep fluids away from the LCD and the interior of it.
3. Be cautious of the tiny removable components when you use a vacuum cleaner to absorb the dirt on the floor.
4. Turn the system off before you start to clean up the LCD.
5. Never drop any tiny objects through the openings of the LCD or get circuit board damp or wet.
6. Be cautious of all kinds of cleaning solvents or chemicals when you use it for the sake of cleaning. Some individuals may be allergic to the ingredients.
7. Avoid any food, drink or smoking around the LCD.

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Cleaning Tools

Although many companies have created products to help improve the process of cleaning your computer and peripherals, users can also use household items to clean their computers and peripherals. Below is a list of items you may need or want to use while cleaning your computer or computer peripherals.

Please keep in mind that some components in your computer may only be cleaned using a product designed for cleaning that component, if this is the case it will be mentioned in the cleaning tips.

- ***Cloth*** - A piece of cloth is the best tool to use when rubbing up a component. Although paper towels or tissues can be used on most hardware as well, we still recommend you to rub it with a piece of cloth.

Water or rubbing alcohol – You may moisten a piece of cloth a bit with some water or rubbing alcohol and rub it on the computer.
Unknown solvents may be harmful to the plastics parts.

Vacuum cleaner - Absorb the dust, dirt, hair, cigarette particles, and other particles out of a computer can be one of the best methods of cleaning a computer. Over time these items can restrict the airflow in a computer and cause circuitry to corrode.

Cotton swabs - Cotton swaps moistened with rubbing alcohol or water are excellent tools for wiping hard to reach areas in your keyboard, mouse, and other locations.

- ***Foam swabs*** - Whenever possible it is better to use lint free swabs such as foam swabs.

ESD Precautions

Observe all conventional anti-ESD methods while handling the components contained within the LCD should the need arises for adding a functionality. The use of a grounded wrist strap and an anti-static work pad is recommended. Avoid dust and debris or other static-accumulating materials in your work area.

Conventions Used in This Manual

Naming

From this point on and throughout the rest of this manual, the MPD 12/15/17AG series is referred to as simply the "LCD."

WARNING!

Warnings appear where overlooked details may cause damage to the equipment or result in personal injury. Warnings should be taken seriously. Warnings are easy to recognize. The word "warning" is written as "**WARNING**," both capitalized and bold and is followed by text in italics. The italicized text is the warning message.

CAUTION!

Cautionary messages should also be heeded to help you reduce the chance of losing data or damaging the system. Cautions are easy to recognize. The word "caution" is written as "**CAUTION**," both capitalized and bold and is followed by text in italics. The italicized text is the cautionary message.

NOTE:

These messages inform the reader of essential but non-critical information. These messages should be read carefully as any directions or instructions contained therein can help you avoid making mistakes. Notes are easy to recognize. The word "note" is written as "**NOTE**," both capitalized and bold and is followed by text in italics. The italicized text is the cautionary message.

Lists

Bulleted Lists: Bulleted lists are statements of non-sequential facts that can be read in any order. Each statement is preceded by a round black dot "•" or bullets in other shapes.

Numbered Lists: Numbered lists describe sequential steps you should follow in order.

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Chapter

1

General Information

1.1 Introduction

The MPD 12/15/17AG series is the latest line of RoHS-compliant LCD monitors from CyberResearch, Inc.

The MPD 12/15/17AG series is equipped with a 12.1/15/17 inch TFT type color LCD. With exceptional brightness and wide-view-angles, and fast response performance, the series is ideal for a wide range of applications.

The MPD 12/15/17AG supports resolutions up to 1280(H) X 1024(V) pixels with 260,000 colors.

The MPD 12/15/17AG series is designed to fit Industrial automation or any applications that require minimum installation space and flexible configuration. The flat front panel provides IP 65 protection which effectively ward off dust and water.

Flexible analog or DVI-D interfaces are provided for ease of connection with a management computer. Resistive or capacitive types of touch panels are provided as ordering options. If remote/non-attentive control is preferred, RS-232 or USB interfaces can be applied using customized adapter cables.

The MPD 12/15/17AG series does not restrict itself to the automation applications. Applicable solutions include the following:

- Digital Surveillance
  - Digital surveillance
  - X-ray imaging terminal
  - Bedside entertainment
  - Multimedia advertising platform
- General Computing
  - Computer-based testing center
  - General purpose information system
  - Mobile nursing station
  - Interactive education uses

- Automation & Control
  - Plant environment monitoring
  - Factory automation HMI terminal
  - Shop-floor/MES control
- Self-service Kiosk
  - Full-service receptionist kiosk
  - Hospital self-registrating terminal
  - Interactive photo kiosk
  - Video rental kiosk
  - Self-service POS terminal

MPD 12/15/17AG Series Comparison Chart

Model	MPD 12AG	MPD 15AG	MPD 17AG
LCD Size	12.1”	15”	17”
Input Interface	VGA + DVI-D	VGA + DVI-D	VGA + DVI-D
Max. Resolution	800X600	1024X768	1280X1024
Brightness (cd/M^2)	250	250	250
Contrast	500:1	400:1	500:1
Color	262K	262K	16.2M
Pixel Pitch (mm)	0.3075	0.297	0.264
Front Frame	Aluminum	Aluminum	Aluminum
Chassis	Heavy-duty steel	Heavy-duty steel	Heavy-duty steel
View Angle (H/V)	140/110	120/100	140/130
Power Adapter	45W	45W	45W
OSD Functions	Yes	Yes	Yes
Mounting Methods	Wall/Panel/Rack/Arm	Wall/Panel/Rack/Arm	Wall/Panel/Rack/Arm
Color of Standard Models	Silver	Silver	Silver
Dimensions	340 x 260 x 58	410 x 309 x65.1	452 x 356 x 65.2

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(WxHxD) mm			
Operating Temperature (°C)	0 to 50	0 to 50	0 to 50
IP Level	IP 65	IP 65	IP 65

Table 1-1: Series Models Comparison Chart

1.2 Series Model Variations

MPD 12AG 12.1” LCD
MPD 12AG: 12.1" LCD Monitor, Aluminum Front, Silver Color
MPD 12AG-TR: 12.1" LCD Monitor, Aluminum Front, Silver Color, w/ 12.1" Touch Screen
MPD 15AG 15” LCD
MPD 15AG: 15" LCD Monitor, Aluminum Front, Silver Color
MPD 15AG-TR: 15" LCD Monitor, Aluminum Front, Silver Color, w/ 15" Touch Screen
MPD 17AG 17” LCD
MPD 17AG: 17" LCD Monitor, Aluminum Front, Silver Color
MPD 17AG-TR: 17" LCD Monitor, Aluminum Front, Silver Color, w/ 17" Touch Screen

Continuous Output Power	45W max.
Hi-pot Isolation: Input / Output	4242VDC

Table 1-9: Power Adapter Specifications

1.3 Product Dimensions

Series Dimensions:	
12.1" LCD	Panel Cutout: 312(W) x 229(H) x 50(D) mm Front panel: 340(W) x 260(H) x 58(D) mm
15" LCD	Panel Cutout: 388(W) x 287(H) x 55.1(D) (mm) Front panel: 410.0(W) x 309(H) x 65.1 (D) (mm)
17" LCD	Panel Cutout: 427(W) x 333(H) x 55.2(D) mm Front panel: 452(W) x 356(H) x 65.2(D) mm

Table1-10: Product Series Dimensions

12.1" LCD Dimensional Drawing:

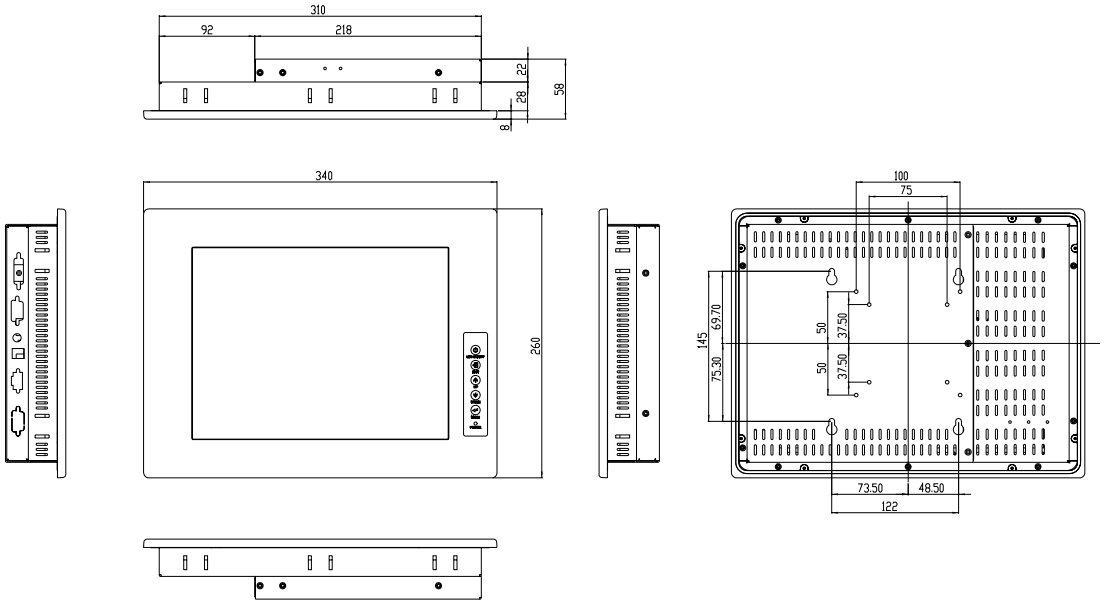

Figure 1-1: MPD 12AG Series Front Panel 12.1" LCD Dimensions

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Shock	10G (1/2 sine, 11msec)
Color	Beige (Pantone 413C or any specified paint color)
Dimensions	17” LCD: 452(W) x 356(H) x 65 (D) mm; see the dimensions in the following discussion
Protection	IP-65
Environmental Friendliness	RoHS compliant
Ventilation	Natural cooling air circulation

Table 1-2: General Hardware Specifications

1.3.2 LCD Display Specifications

12.1" LCD (AUO):

Size	12.1"
Model	G121SN01
Resolution (pixel)	SVGA (800 x 600)
Active Area (mm)	246.0 x 184.5
Pixel Pitch (mm)	0.307
Mode	TN
Number of Colors	262K
Color Saturation (NTSC%)	55
View Angle (H/V)	150/110
Brightness (cd/m^2)	250
Contrast Ratio	500:1
Response Time (ms at 25°C)	35
Power Consumption (W)	7.3
Interface	1ch LVDS
Supply Voltage (V)	3.3
Backlight	2 CCFL
Lamp Life (hrs)	50,000

Table 1-3: 12.1" Display Specifications

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12.1" LCD (Toshiba):

Size	12.1"
Model	LTD121C30S
Resolution (pixel)	SVGA (800 x 600)
Pixel Pitch (mm)	0.297
Number of Colors	262K (18 bits)
View Angle (H/V)	R/L: 70/70; U/D: 55/70
Brightness (cd/m^2)	250
Storage Temperature	-20 to 80°C
Lamp Life (hrs)	50,000

Table 1-4: 15" Display Specifications

15” LCD (AUO):

Size	15”
Model	G150XG01
Resolution (pixel)	XGA (1024 x 768)
Active Area (mm)	304.1 x 228.1
Pixel Pitch (mm)	0.297
Mode	TN
Number of Colors	262K
Color Saturation (NTSC%)	60
View Angle (H/V)	130/120
Brightness (cd/m^2)	250
Contrast Ratio	400:1
Response Time (ms at 25°C)	12
Power Consumption (W)	11.5
Interface	1ch LVDS
Supply Voltage (V)	3.3
Backlight	2 CCFL
Lamp Life (hrs)	50,000

Table 1-5: 15” Display Specifications

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17” LCD (AUO):

Size	17”
Model	M170EG01 V8
Resolution (pixel)	SXGA (1280 x 1024)
Aspect Ratio	5:4
Active Area (mm)	337.9 x 270.3
Pixel Pitch (mm)	0.264
Mode	TN
Number of Colors	16.2M
Color Saturation (NTSC%)	72
View Angle (H/V)	140/130
Brightness (cd/m^2)	250
Contrast Ratio	500:1
Response Time (ms at 25°C)	8
Power Consumption (W)	25.8
Interface	2ch LVDS
Supply Voltage (V)	5
Backlight	4 CCFL

Table 1-6: 17” Display Specifications

1.3.3 Optional Touch Screen Specifications

Model	PanJit S121F2/S150F5/S171E1 series
Type	Analog resistive 5-wire or 8-wire
Resolution	4096 x 4096 dpi based on controller resolution
Position Accuracy	Less than 1.5%
Light Transmission	Anti-glare type: 78% to 90%
Input Method	Finger, Stylus, or gloved hand
Temperature (typical)	Operating: -10 to 60°C (8-wire: -40 to 85°C) Storage: -20 to 70°C (8-wire: -40 to 85°C)
Surface Hardness	3H and above per JIS K5400
Electrostatic Protection	Touch panel: 30KV (Contact/Air) Controller: 20KV (Contact/Air)
Life	Hitting: more than 10 million hits for 5-wire models Drawing: more 300K alphabets for 5-wire models
Supported OSes	Windows XP/XP embedded, Windows 2000, Windows ME, Windows 98SE, Windows CE.Net 4.2 (x86 and ARM), WHQL certified, Linux Fedora Core I/II, Mandrake 10.0/10.1, RedHat 9.0

Table 1-7: Optional Touch Screen Specifications

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1.3.4 Optional Rack-Mounting Kits

Model	Description
MPD 12RK	Fits MPD 12AG series
MPD 15RK	Fits MPD 15AG series
MPD 17RK	Fits MPD 17AG series

Table 1-8: Optional Mounting Kits

1.3.5 Power Adapter

General Description:	
■ 45 Watt AC/DC Adapter	
■ Universal Input 90 to 264 VAC	
■ EMI Meets FCC/CISPR 22 Class B	
■ MTBF 165Khrs	
■ Limited Power Source	
Input Specifications:	
Input Voltage Range	90-264VAC
Input Frequency	47-63 Hz
Inrush Current	40A max. (Cold Start)
General Specifications:	
Hold-up Time	10mS typical
Leakage Current	0.5mA max.
Short Circuit Protection	Continuous
Over-voltage Protection	Yes

Continuous Output Power	45W max.
Hi-pot Isolation: Input / Output	4242VDC

Table 1-9: Power Adapter Specifications

1.4 Product Dimensions

Series Dimensions:	
12.1" LCD	Panel Cutout: 312(W) x 229(H) x 50(D) mm Front panel: 340(W) x 260(H) x 58(D) mm
15" LCD	Panel Cutout: 388(W) x 287(H) x 55.1(D) (mm) Front panel: 410.0(W) x 309(H) x 65.1 (D) (mm)
17" LCD	Panel Cutout: 427(W) x 333(H) x 55.2(D) mm Front panel: 452(W) x 356(H) x 65.2(D) mm

Table1-10: Product Series Dimensions

12.1" LCD Dimensional Drawing:

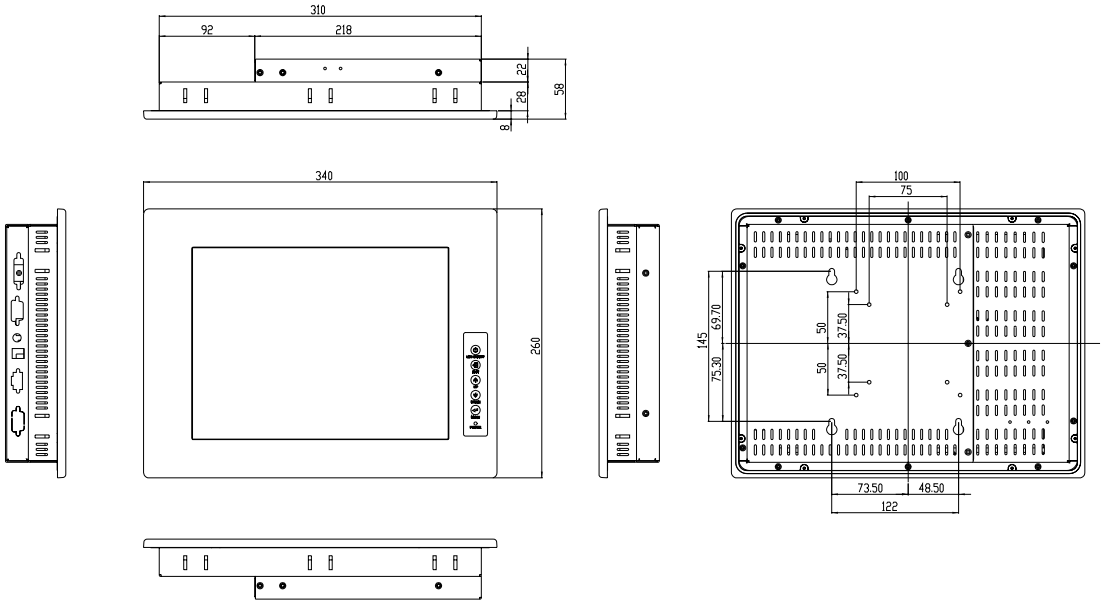

Figure 1-1: MPD 12AG Series Front Panel 12.1" LCD Dimensions

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15” LCD Dimension Drawing:

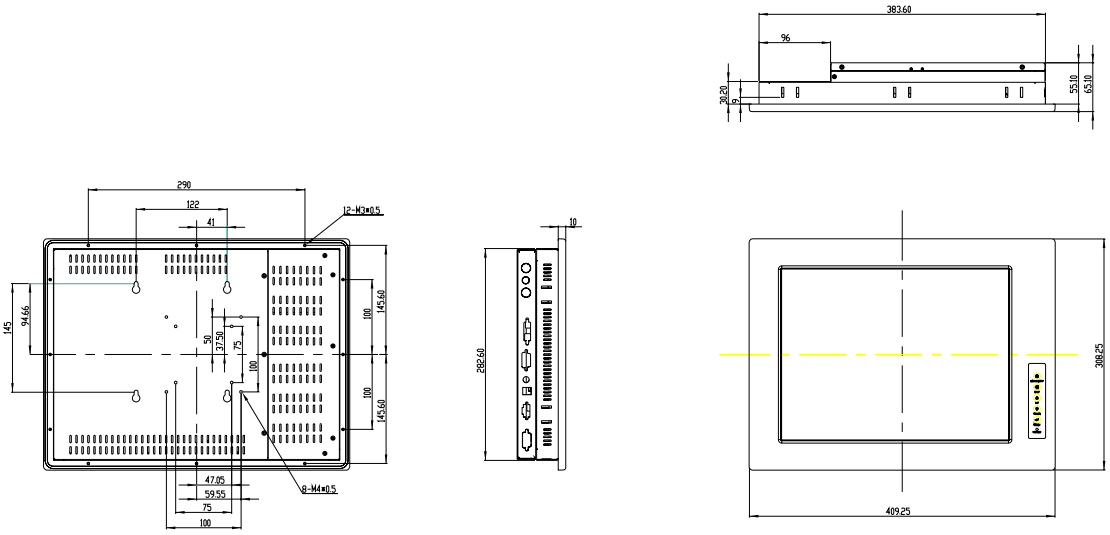

Figure 1-2: 15” LCD Dimensions

17” LCD Dimension Drawing:

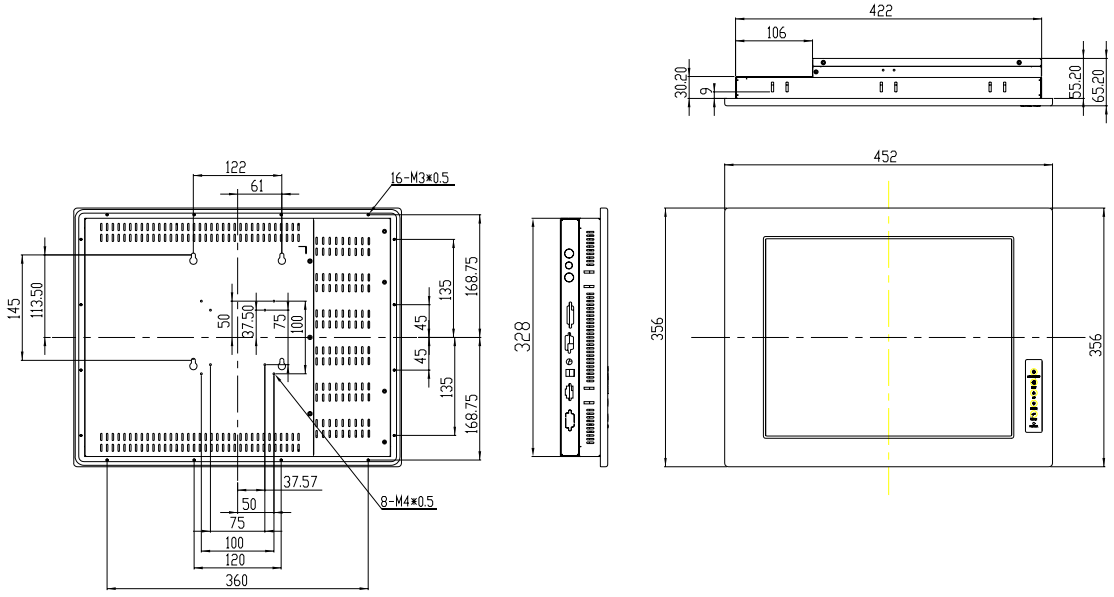

Figure 1-3: 17” LCD Dimensions

Chapter

2

Installation

WARNING!

- The MPD 1xAG series LCD must be installed and operated only by trained and qualified personal. Maintenance, upgrade, or repair on the open device may only be RMA'ed or carried out by qualified personnel who are familiar with the associated dangers.

- Since the device may weigh up to 10 kg (not including a swing arm or accessories of the like), it is advisable to have another person assist in the installation.

- Make sure there is sufficient air circulation around the device when installing the LCD.

- The openings for cooling on the device (on upper and back-end side) must not be obstructed by objects or the like. If the ventilation holes are blocked, this can cause an overheating of the PC. At least 5 cm of space free around the unit should be available to prevent the device from possibly overheating!

- The LCD should be properly grounded. The voltage feeds must not be overloaded. Adjust the cabling and provide external overcharge protection as noted by the electrical values indicated on the short description label attached to the back of the LCD.

- Before the LCD is disassembled we strongly recommended that you should shut down the system and unplug the power cord. Electric shock and personal injury might occur if you access the main board inside the LCD while the power cord is still attached.

2.2 LCD Installation

The Touch Panel functionality comes as an optional implementation to the MPD 1xAG LCD. The LCD panel connects to the host system's VGA interface via the included VGA cable or a separately purchased DVI cable to a VTA card that features DVI connectivity.

2.2.1 LCD without a Touch Screen

Connection

Step 1. Connect the graphics card to the VGA or DVI-D signal input port on the rear panel.

Step 2. Connect the +12V DC jack or the DC power source to the terminal block.

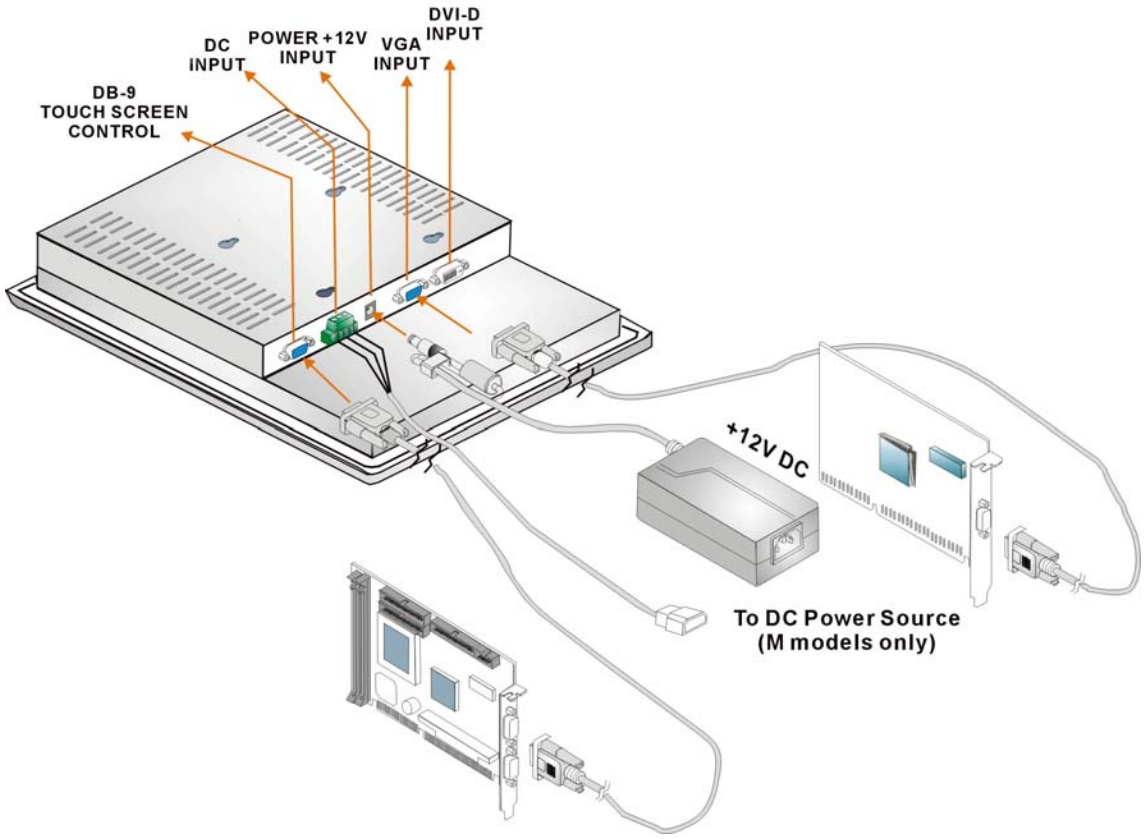

Figure 2-1: Connection w/o Touch Screen

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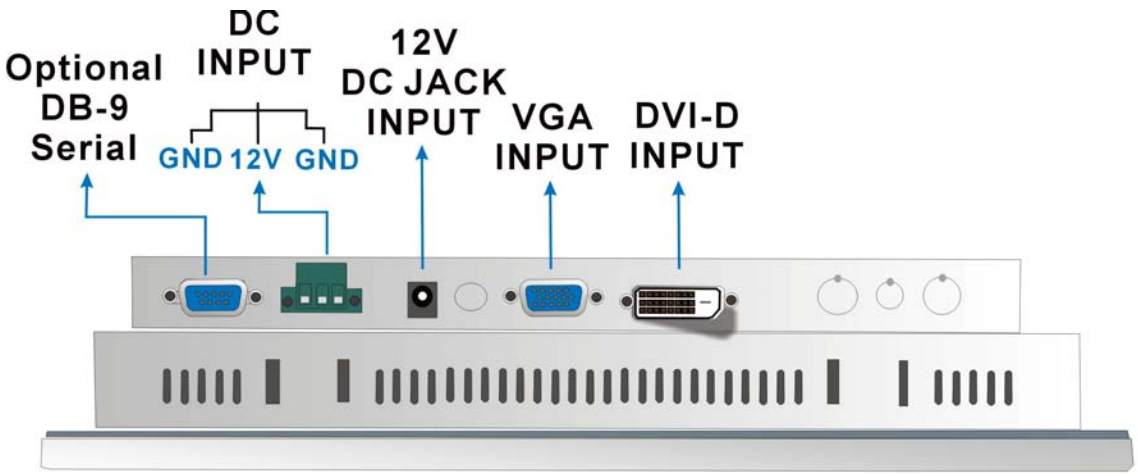


Figure 2-2: Rear Panel Interfaces

2.2.2 LCD with a Touch Screen

Connection

Step 1. Connect the CPU card to the RS-232 port on the rear panel

Step 2. Install the drivers for managing the touch screen from the utility CD shipped with the system.

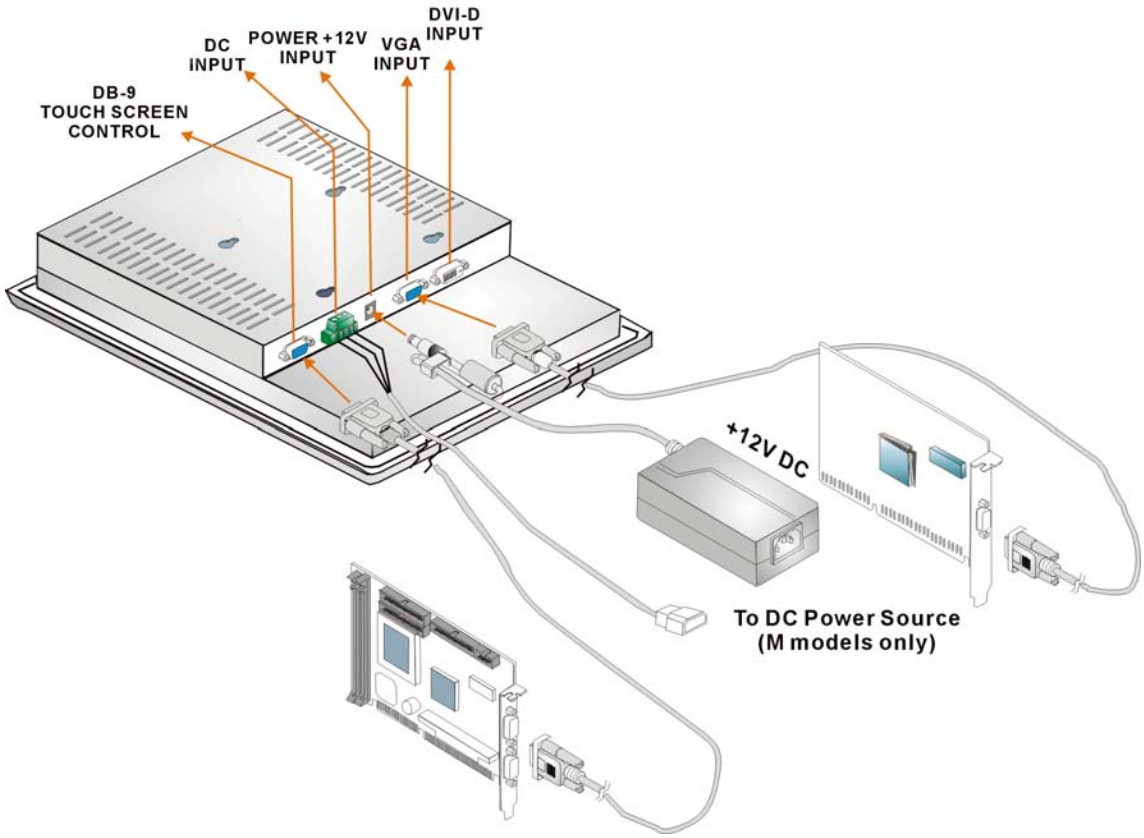


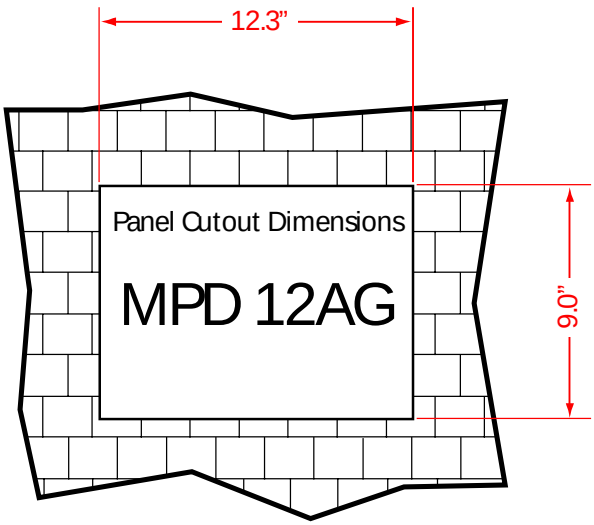
Figure 2-3: Connection w/ Touch Screen

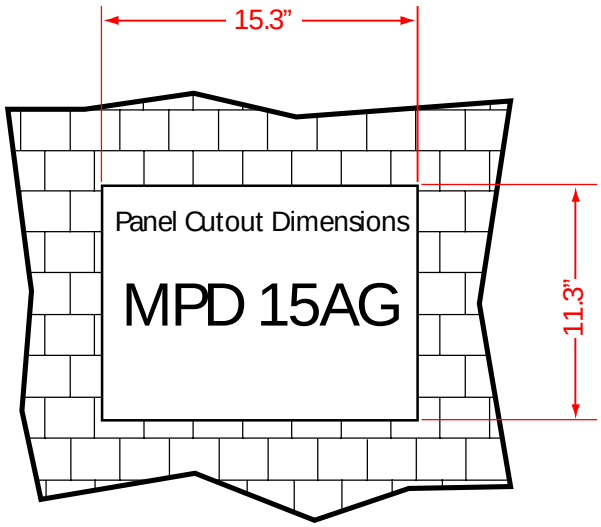
2.3 Panel Mounting

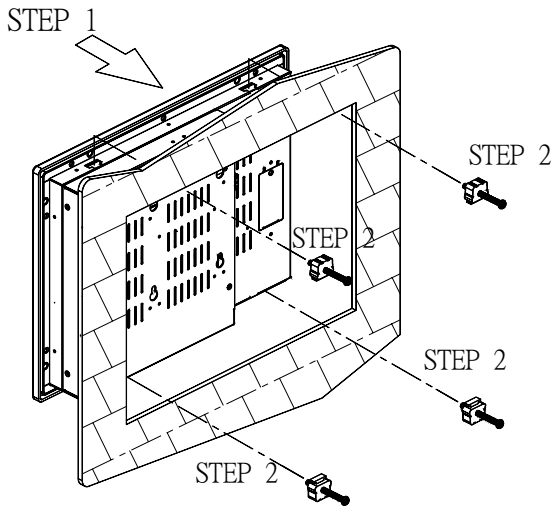
Refer to the diagrams below for details on mounting the LCD. Care should be taken with the cutout dimensions.

Step 1. Place the LCD into the panel.

Step 2. Fasten the LCD into the panel using four supporters as diagrammed below.







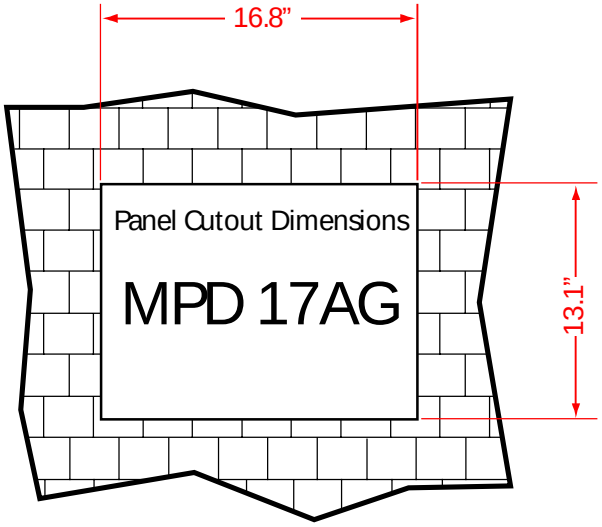


Figure 2-4: Panel Mounting

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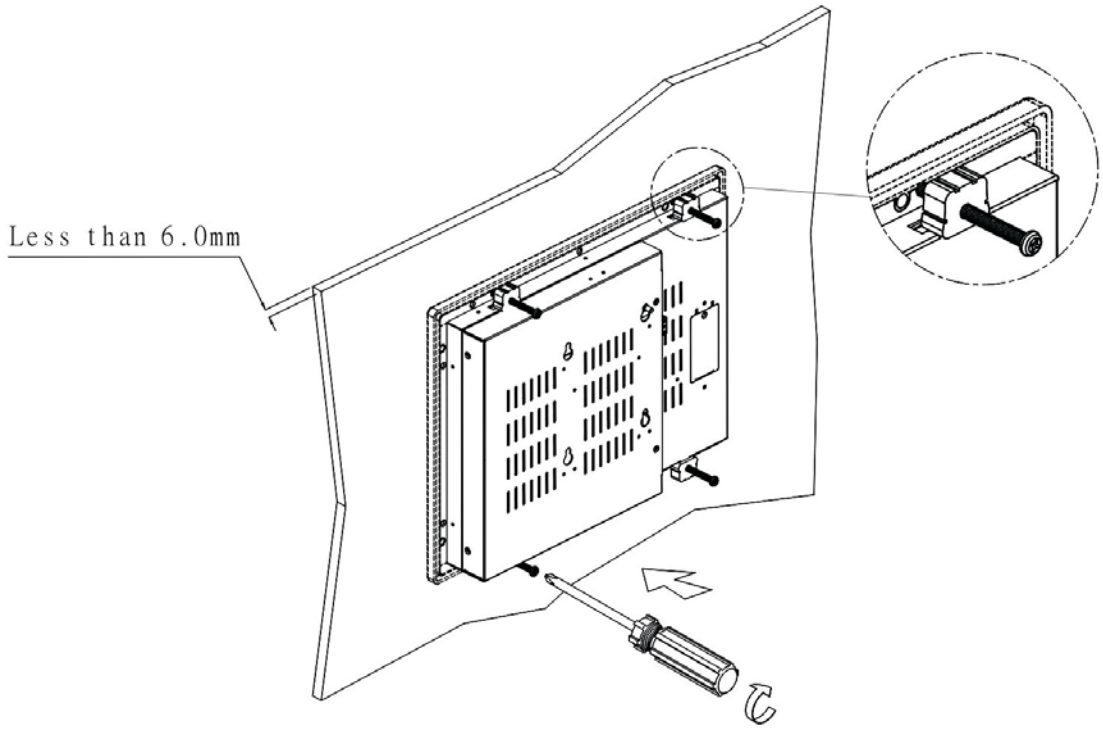

Figure 2-5: Panel Mounting Details

2.4 Arm Mounting

The MPD 1xAG series is not only suitable for panel and wall mounting but also ideal for arm mounting with a 75/100mm VESA standard mounting positions.

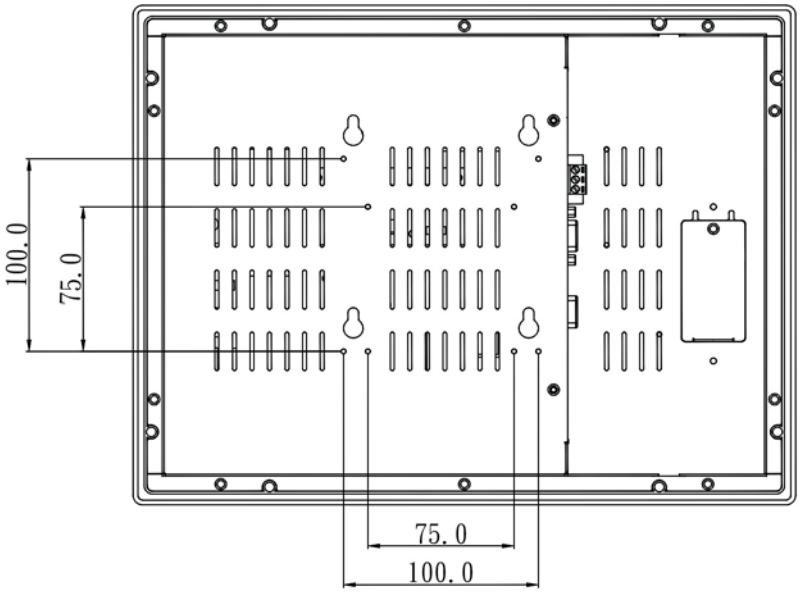

Figure 2-6: VESA Standard Holes

Figure 2-7: Exemplary Swing-arm Installation

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2.5 Wall Mounting

The MPD 1xAG series can be mounted on wall with the help of wall-mounting holders. Holes should be drilled on the wall according to the diagrams below.

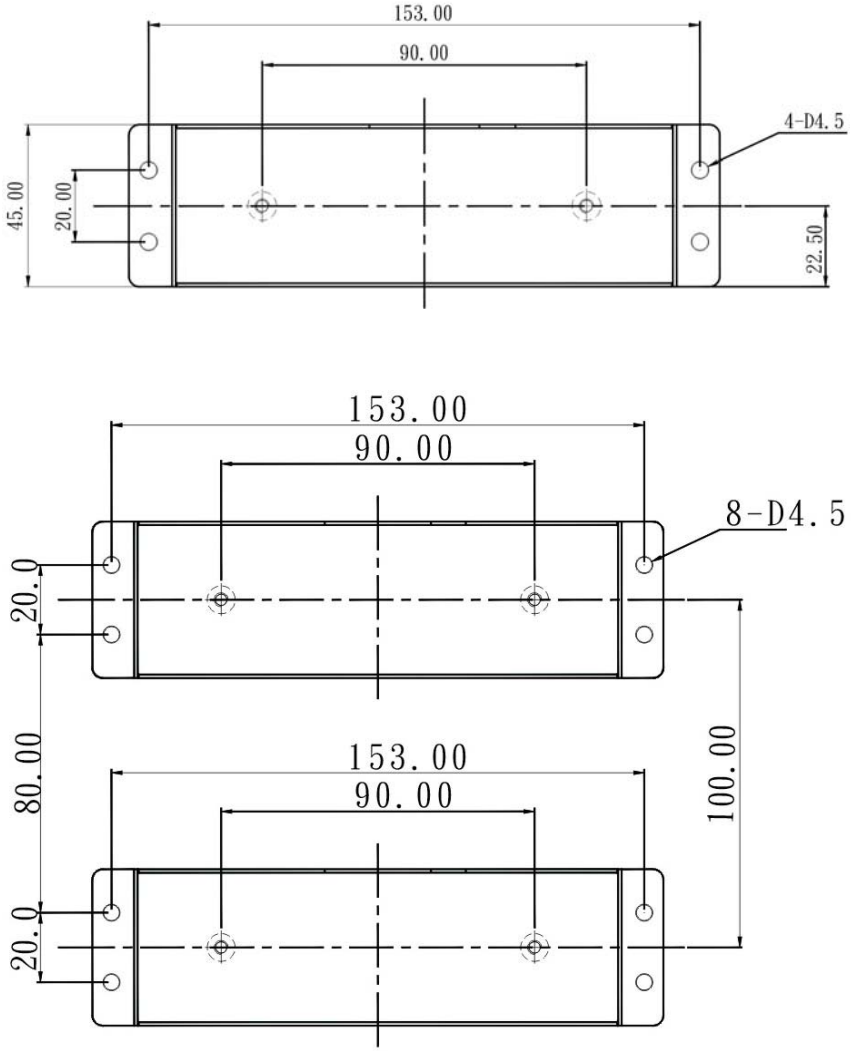

Figure 2-8: Wall-mounting Holder Dimensions and Hole Positions

Mounting Steps:

Step 1. Fasten the two wall-mount brackets to the wall each with four screws.

Step 2. Fasten the four screw bolts to the wall-mount brackets as shown below.

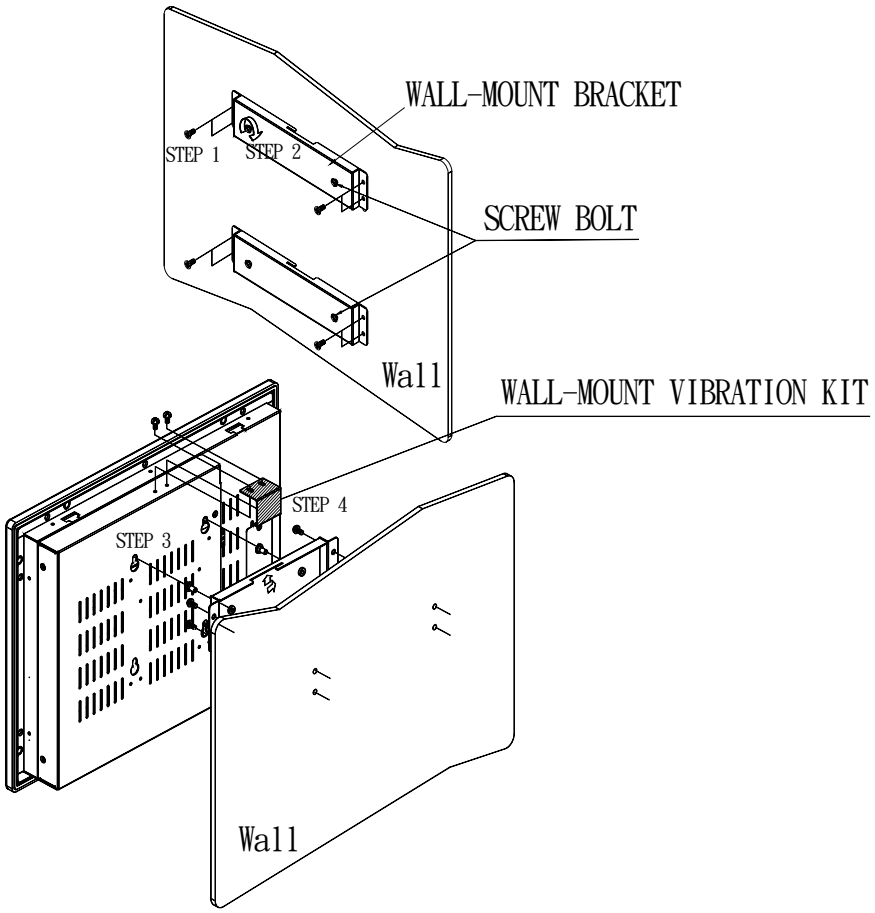

Figure 2-9: Attaching Wall-mount Brackets and the Vibration Kit

Step 3. Hang the LCD onto the wall.

Step 4. Fasten the wall-mount vibration stopper to the top.

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2.6 Rack Mounting

The MPD 1xAG series can be integrated into industry standard 19” rack cabinets using optional rack-mount kits. The dimensions of the rack-mount kit for a 12.1” LCD is shown below. All series models using a specific rack-mounting kit which mounts into a standard 19” rack cabinet.

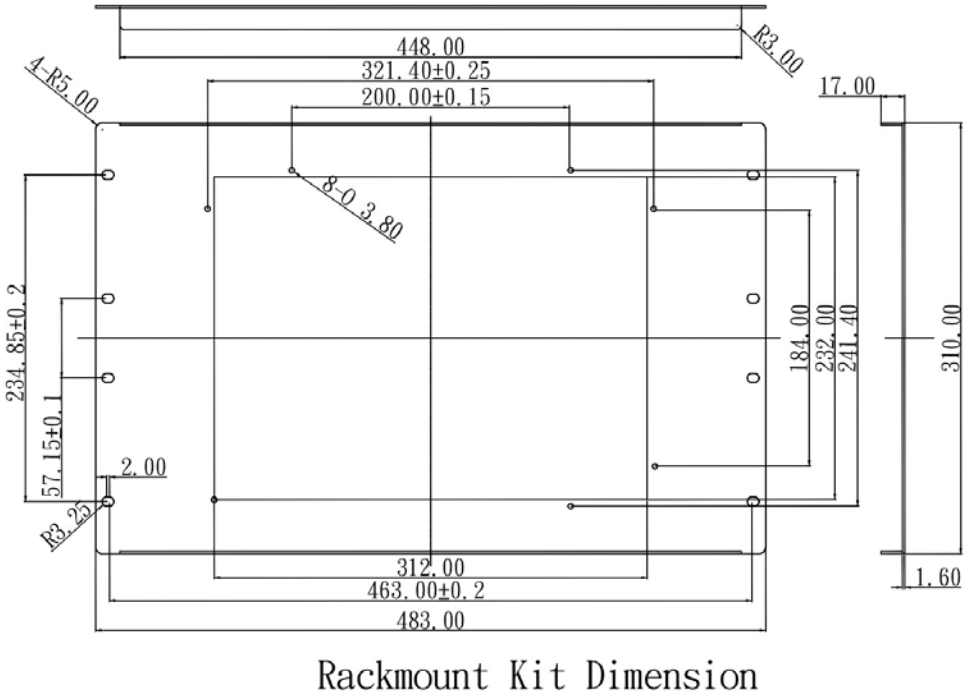

Figure 2-10: Rack-mounting Kit Dimensions

Steps 1 & 2. Fasten the rack-mount kit to the back of the LCD.

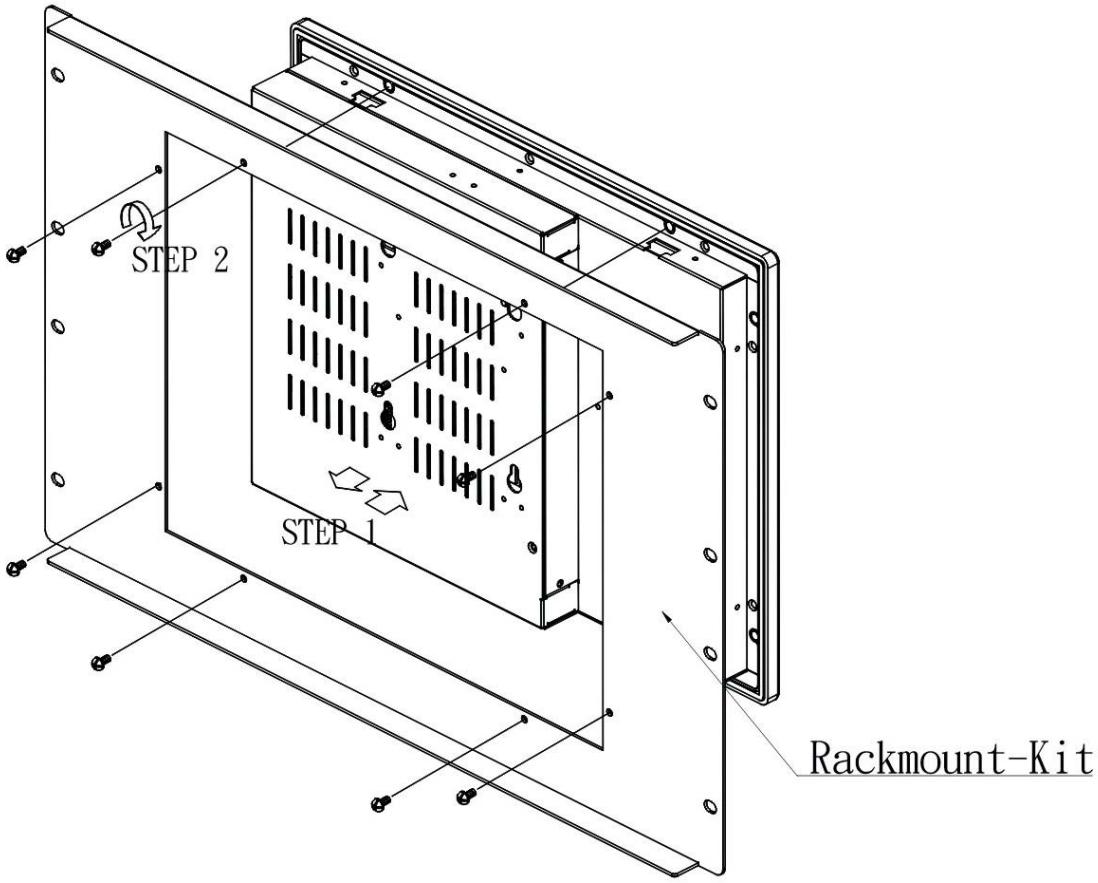

Figure 2-11: Rack-mounting Steps 1 and 2

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Steps 3 & 4. Fasten the LCD along with the rack-mount kit to the rack posts of a rack cabinet.

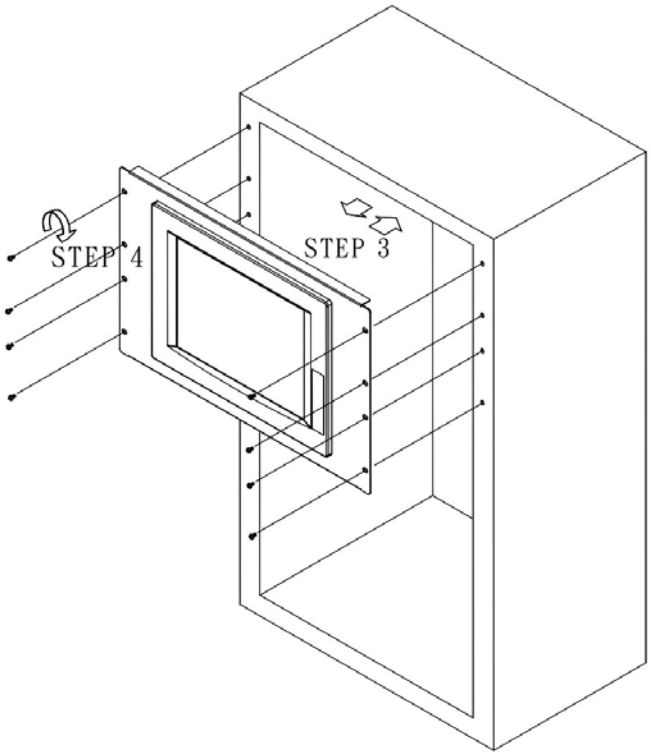

Figure 2-12: Rack-mounting Steps 3 and 4

2.7 Cabling

Power Supply Terminals

Connect the power cable according to the following procedures.

Step 1. Check if the power cord is disconnected from the wall plug.

Step 2. Loosen screws from the terminal, align and insert the wire terminals form your power cord and tighten the screws. Replace the terminal block's plastic cover (if applied).

Cable Tie Attachment

After all cables have been properly connected, you may use cable ties to secure these cables to the plastic cable tie holders on the rear panel. Doing this helps prevent accidental disconnection which might lead to system down time.

CAUTION!

Following are the responsibilities of system design and integrators:

1. Separation of the input/output lines to increase noise resistance. Methods like twisting the power wires attached to the terminal should

be applied.

2. Power cord should not be bundled with main circuit lines or the input/output signal lines.
3. Surge protection and proper grounding.

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Chapter

3

OSD Controls

3.1 User Mode OSD Structure

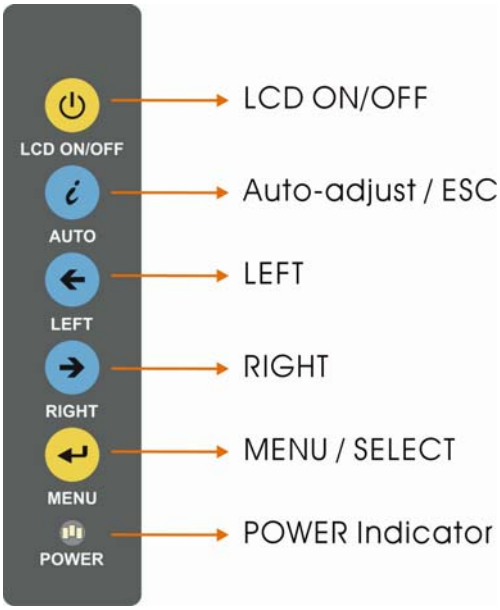

Figure 3-1: OSD Buttons

NOTE:

Pressing the direction keys (LEFT or RIGHT) brings out a simple menu which adjusts the LCD screen brightness and contrast values.

Level 0	Level 1	Value
Main Display Features Menu	Brightness	0 to 100
	Contrast	0 to 100
	Horizontal Size	0 to 100
	Phase	0 to 100
	H. Position	0 to 100
	V. Position	0 to 100
	Sharpness	1 to 5
Speaker	Volume	This menu is currently disabled, and will be implemented with models equipped with speakers.
	Mute	
Color Menu	9300	- preset NTSC value
	7500	- preset NTSC value
	User	RGB values from 0 to 100

Language Menu	English	Select
	French	
	German	
	Spanish	
	Italian	
	Japanese	
	Russian	
	Traditional Chinese	
	Simplified Chinese	
OSD Menu	OSD Time Out	0 to 60 sec
	OSD Position	1 to 5
	OSD Transparency	0 to 100
	Auto Setting	On or Off
	Recall	No or Yes
	Aspect Ratio	4:3 or 5:4
Signal Menu	Digital	Select
	Analog	
Backlight Menu	Light Enable	On or Off
	Light Contrast	0 to 100
	Light Brightness	0 to 100
	Light H Start	0 to 100
	Light H Width	0 to 100
	Light V Start	0 to 100
	Light V Height	0 to 100

Table 3-1: OSD Menu Structure

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Using the OSD

Main Display Features

- **Brightness**

  The brightness option adjusts the brightness of screen. This function adjusts the offset value of ADC. Please mind that setting this value too high or too low will affect the quality of image.

- **Contrast**

  This function adjusts the gain value of ADC. Please mind that adjusting this value too high or too low will worsen the quality of image.

- **Horizontal Size**

  This item allows you to adjust the screen size in the Horizontal direction.

- **Phase**

  This option adjusts the input signal and dot clock position. (Analog only)

- **H. Position**

  Adjusts the horizontal position of the display screen

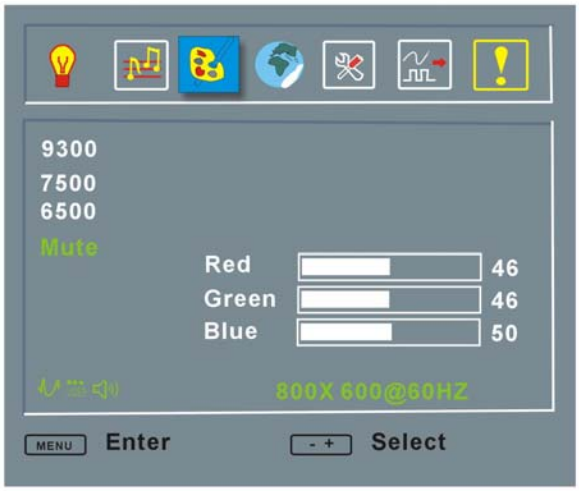
- **V. Position**

  Adjusts the vertical position of the display screen.

- **Sharpness**

  Adjusts the sharpness level to one of the 5 preset values. This option may help reducing the softening edges around displayed objects.

Color



This menu allows you to fine-tune the palette of color hues for your LCD.

- **9300**

  NTSC standard Kelvin

- **7500**

  NTSC standard Kelvin

- **User**

  This item allows you to fine-tune the balance among Red, Green, and Blue color hues if images look garish or unrealistic.

Language

This menu provides options for selecting ODS screen legends in a preferred language.

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OSD Configuration

- **OSD Time Out**

  Determines how many seconds the OSD screen stays on screen before it disappears when OSD is left unattended.

- **OSD Position**

  Adjusts the OSD position on the screen. The position 1 is on the upper left of the screen, position 2 on the upper right, position 3 the center, and vice versa.

- **OSD Transparency**

  Determines the opaqueness of OSD background.

- **Auto Setting**

  This function automatically adjusts the LCD screen position in situations such as connecting the LCD to a different host computer.

- **Recall**

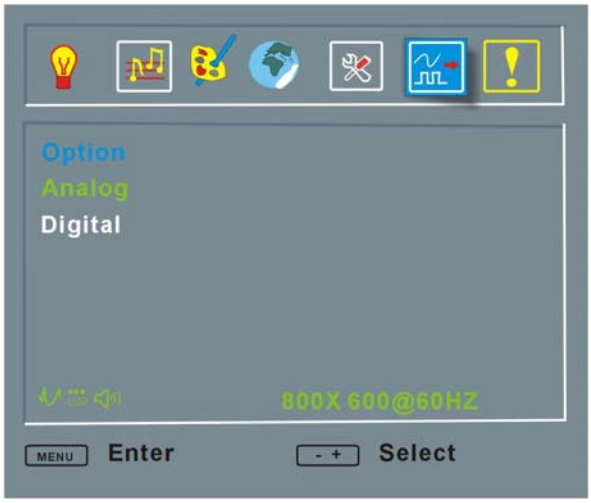
  Restores the default OSD settings. Note that this will restore all default display settings.

- **Aspect Ratio**

  Adjusts the display ratio referring to the width of the screen and then to the height of the screen.

Signal

This menu allows you to manually select the type of graphic source input, i.e., analog (15-pin VGA) or digital (DVI-D).



Backlight

- **Light Enabled**

  Turns backlight on or off.

- **Light Contrast**

  Adjust the backlight contrast.

- **Light Brightness**

  Adjust the backlight brightness.

- **Light H Start**

  Adjusts the backlight projection area in the horizontal direction.

- **Light H Width**

  Adjusts the width of the backlight projection area.

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- **Light V Start**

  Adjusts the backlight projection area in the vertical direction.

- **Light V Height**

  Adjusts the size of backlight projection area in the vertical direction.

Chapter

4

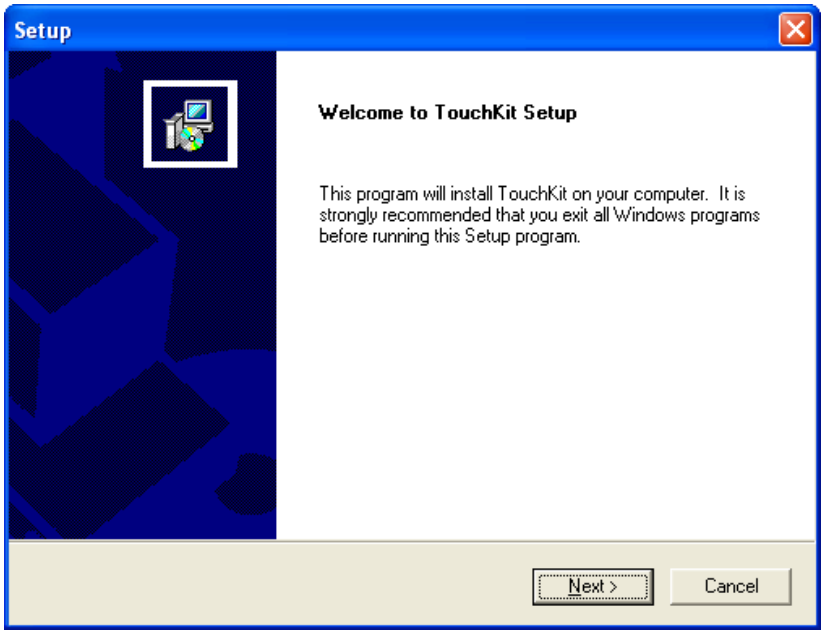
Software Drivers

Touch Panel Driver

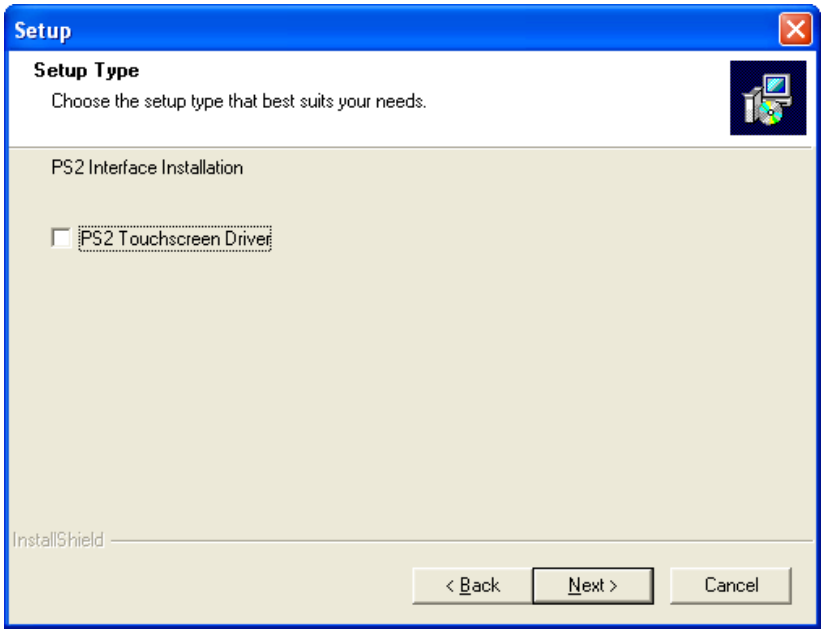
This touch panel controller provides optimum performance of analog resistive touch panels for four-wire, five-wire & eight-wire models. It communicates with PC system directly through the COM4 serial port interface. The design is superior in sensitivity, accuracy, and user-friendly operation. The touch panel driver emulates mouse left and right button function and supports operation systems including Microsoft Windows 95/98/ME/2000/NT/XP/XP Tablet PC Edition, Windows CE 2.12/3.0/. NET, Linux, iMac and DOS.

To install the driver, locate the Touchkit driver folder in the utility CD that came your LCD. Select and open your OS sub-folder and double-click the Setup icon to start the installation program.

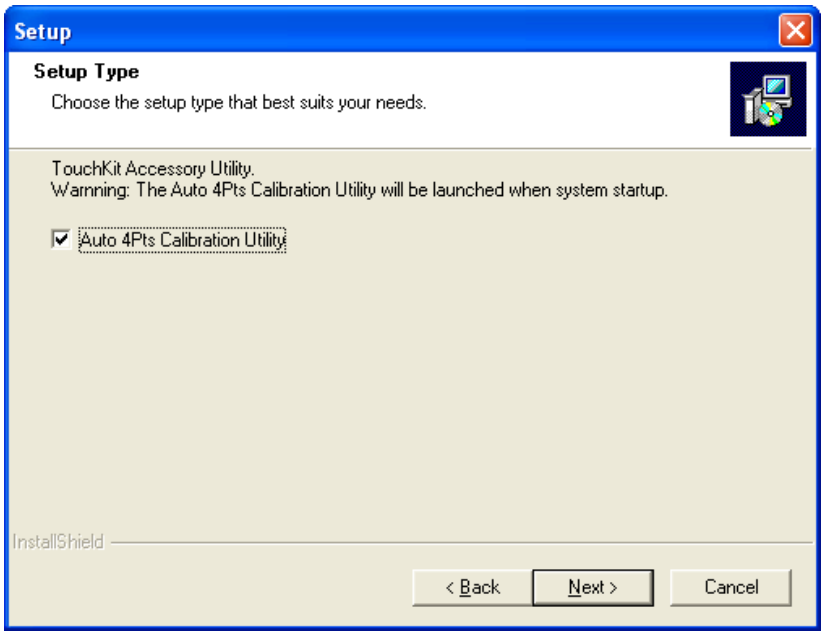
The Touchkit welcome message should prompt. Click Next to continue.


Setup
Welcome to TouchKit Setup
This program will install TouchKit on your computer. It is strongly recommended that you exit all Windows programs before running this Setup program.
Next >
Cancel

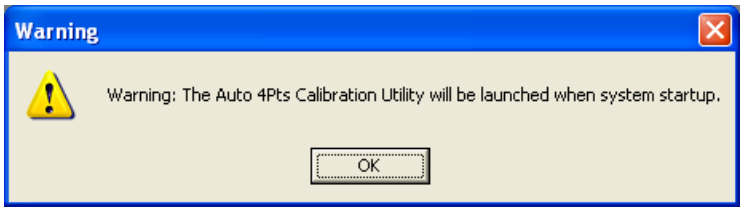
Your MPD 1xAG series touch panel option is connected via serial port interface. You do not have to select the PS/2 option here. Click Next to continue.



Select the Auto 4Pts Calibration Utility check box and click Next to continue.


Setup
Setup Type
Choose the setup type that best suits your needs.
TouchKit Accessory Utility.
Warnning: The Auto 4Pts Calibration Utility will be launched when system startup.
Auto 4Pts Calibration Utility
InstallShield
< Back
Next >
Cancel

Click OK to proceed.



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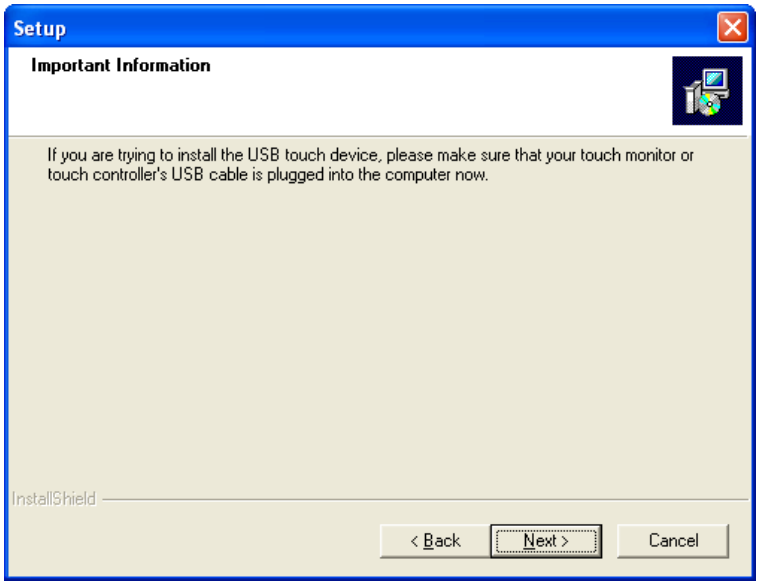
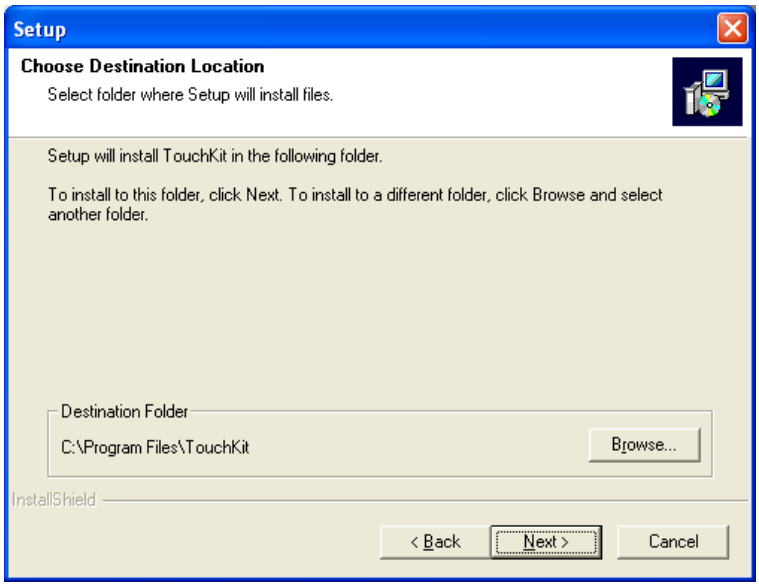
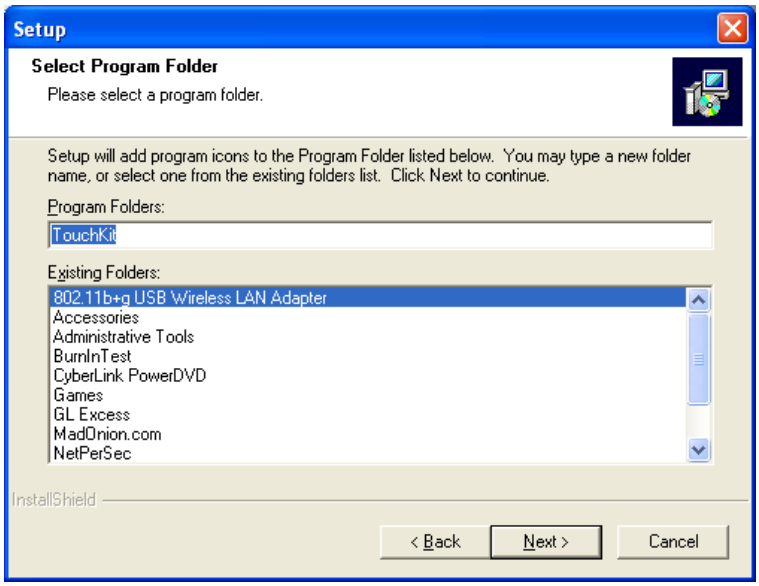

Setup
Important Information
If you are trying to install the USB touch device, please make sure that your touch monitor or touch controller's USB cable is plugged into the computer now.
InstallShield
< Back
Next >
Cancel

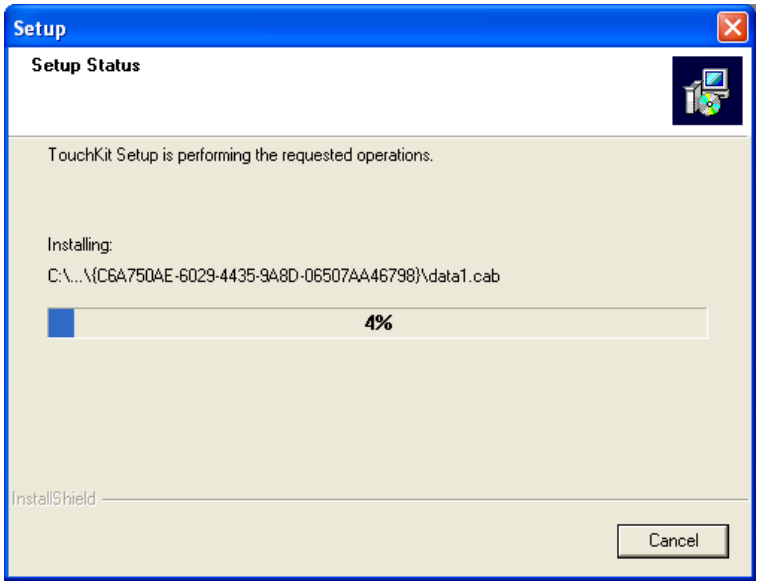
Provide an alternate destination folder or click Next to accept the default location.


Setup
Choose Destination Location
Select folder where Setup will install files.
Setup will install TouchKit in the following folder.
To install to this folder, click Next. To install to a different folder, click Browse and select another folder.
Destination Folder
C:\Program Files\TouchKit
Browse...
InstallShield
< Back
Next >
Cancel

Provide a different name to be displayed in the program folder, or click Next to accept the default.



The installation should now extract and copy files to the selected folder.



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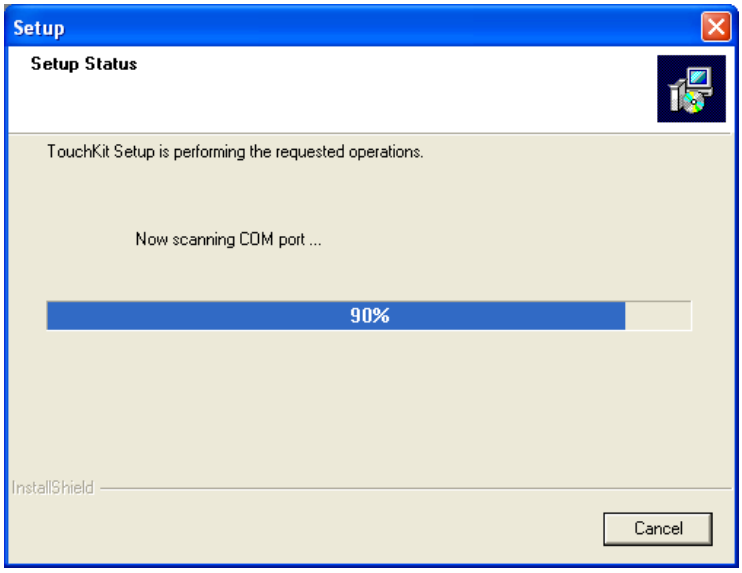
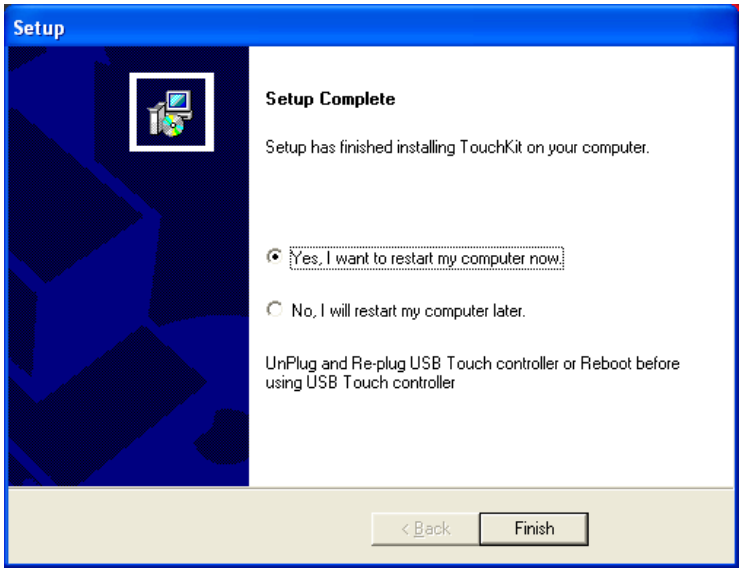
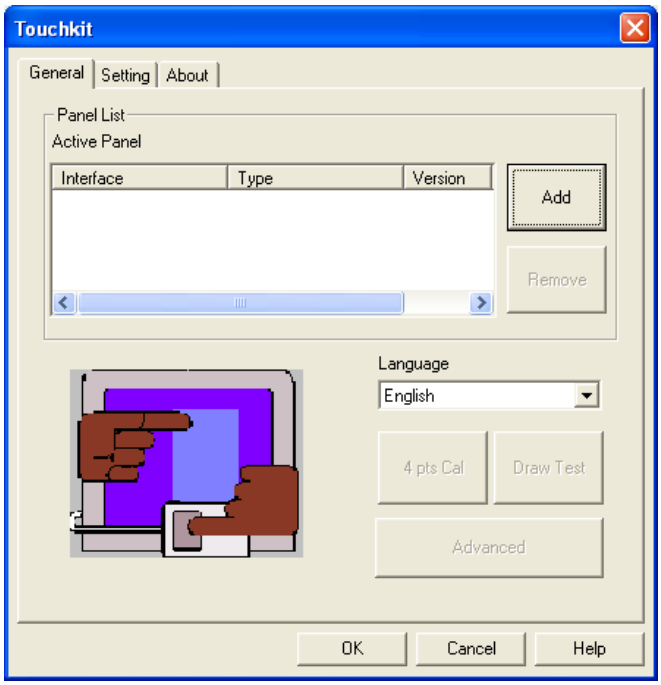
The installation program will then scan the available COM port connection.



You will then be prompted to restart your system. You may choose to reboot later by selecting the No check box. Click Finish to continue.


Setup
Setup Complete
Setup has finished installing TouchKit on your computer.
Yes, I want to restart my computer now.
No, I will restart my computer later.
UnPlug and Re-plug USB Touch controller or Reboot before using USB Touch controller
< Back
Finish

The Touchkit utility should start immediately allowing you to finish the initial setup.



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Appendix

A

Accessories

6.1 Accessory List

Item	Description	Qty.
1	POWER SUPPLY..POTRANS POWER POWER SUPPLY..POTRANS POWER	1
2	POWER CORD/175CM	1
3	VGA CABLE D-SUB 15P M TO M/180CM	1
4	WIRE CABLE/40CM	1
5	PANEL-MOUNT KIT	4(or 10)
6	WALL-MOUNT VIBRATION KIT	1
7	WALL-MOUNT BRACKET	2
8	SCREW BOLT	4
9	SCREW M5X50	4(or 10)
10	SCREW M3	10
11	SCREW M4	8
12	ROUND CABLE D-SUB 9P /180CM, For: TOUCH SCREEN (OPTIONAL)	1

Table A-1 Accessory List

Listed above are the optional items and should be separately purchased.

Appendix

B

Maintenance

Gasket Replacement

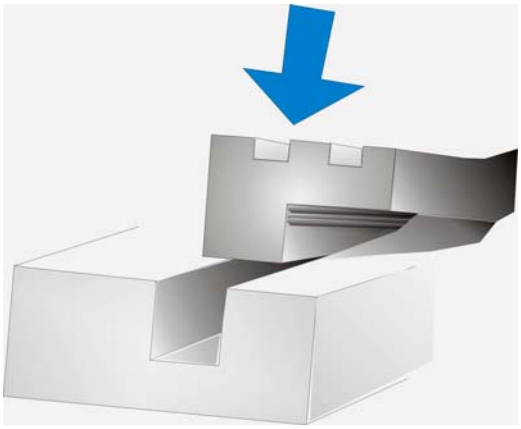
A gasket used for a long time may gradually lose its ability to protect the LCD from fluids and vapors. Scratches or dirt may accumulate and it is recommended to change the gasket at least once a year.

Replacement Procedure:

Step 1. Place the LCD on a flat, level surface with the display screen facing downwards. If the LCD is mounted on a vertical wall or panel, remove it from the installation site.

Step 2. Remove the old gasket from the sides of the LCD.

Step 3. Attach the new gasket to the LCD. Make sure the gasket fits precisely into the groove along the rear-side edges of the LCD's front panel.



Step 4. Check if the gasket is properly attached to the LCD.

NOTE:

The compliance to the IP 65 standard depends on correct installation of the gasket. Be sure to check for proper installation of the gasket before installing it into previous position.

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Product Service

Diagnosis and Debug

CyberResearch, Inc. maintains technical support lines staffed by experienced Applications Engineers and Technicians. There is no charge to call and we will return your call promptly if it is received while our lines are busy. Most problems encountered with data acquisition products can be solved over the phone. Signal connections and programming are the two most common sources of difficulty. CyberResearch support personnel can help you solve these problems, especially if you are prepared for the call.

To ensure your call's overall success and expediency:

1) Have the phone close to the PC so you can conveniently and quickly take action that the Applications Engineer might suggest.
2) Be prepared to open your PC, remove boards, report back-switch or jumper settings, and possibly change settings before reinstalling the modules.
3) Have a volt meter handy to take measurements of the signals you are trying to measure as well as the signals on the board, module, or power supply.
4) Isolate problem areas that are not working as you expected.
5) Have the source code to the program you are having trouble with available so that preceding and prerequisite modes can be referenced and discussed.
6) Have the manual at hand. Also have the product's utility disks and any other relevant disks nearby so programs and version numbers can be checked.

Preparation will facilitate the diagnosis procedure, save you time, and avoid repeated calls. Here are a few preliminary actions you can take before you call which may solve some of the more common problems:

1) Check the PC-bus power and any power supply signals.
2) Check the voltage level of the signal between SIGNAL HIGH and SIGNAL LOW, or SIGNAL+ and SIGNAL– . It CANNOT exceed the full scale range of the board.
3) Check the other boards in your PC or modules on the network for address and interrupt conflicts.
4) Refer to the example programs as a baseline for comparing code.

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Warranty Notice

CyberResearch, Inc. warrants that this equipment as furnished will be free from defects in material and workmanship for a period of one year from the confirmed date of purchase by the original buyer and that upon written notice of any such defect, CyberResearch, Inc. will, at its option, repair or replace the defective item under the terms of this warranty, subject to the provisions and specific exclusions listed herein.

This warranty shall not apply to equipment that has been previously repaired or altered outside our plant in any way which may, in the judgment of the manufacturer, affect its reliability. Nor will it apply if the equipment has been used in a manner exceeding or inconsistent with its specifications or if the serial number has been removed.

CyberResearch, Inc. does not assume any liability for consequential damages as a result from our products uses, and in any event our liability shall not exceed the original selling price of the equipment.

The equipment warranty shall constitute the sole and exclusive remedy of any Buyer of Seller equipment and the sole and exclusive liability of the Seller, its successors or assigns, in connection with equipment purchased and in lieu of all other warranties expressed implied or statutory, including, but not limited to, any implied warranty of merchant ability or fitness and all other obligations or liabilities of seller, its successors or assigns.

The equipment must be returned postage prepaid. Package it securely and insure it. You will be charged for parts and labor if the warranty period has expired.

Returns and RMAs

If a CyberResearch product has been diagnosed as being non-functional, is visibly damaged, or must be returned for any other reason, please call for an assigned RMA number. The RMA number is a key piece of information that lets us track and process returned merchandise with the fastest possible turnaround time.

PLEASE CALL FOR AN RMA NUMBER!

Packages returned without an RMA number will be refused!

In most cases, a returned package will be refused at the receiving dock if its contents are not known. The RMA number allows us to reference the history of returned products and determine if they are meeting your application's requirements. When you call customer service for your RMA number, you will be asked to provide information about the product you are returning, your address, and a contact person at your organization.

Please make sure that the RMA number is prominently displayed on the outside of the box.

• Thank You •

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